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## Short Report

# Wearing of face masks by healthcare workers during COVID-19 lockdown: what did the public observe through the French media?

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## SUMMARY

Wearing a face mask is a major issue in the fight against the spread of the COVID-19 pandemic. The French general population widely started to wear this personal protective equipment usually dedicated to healthcare workers, without being educated to its correct use. People base their behaviour on what they see in the media. However, we observed that mask wearing of healthcare workers published in the media during the pandemic only conformed to good practice guidelines in 70.8% of the photographs collected on some of the main French information websites. Health authorities should communicate widely regarding the good practices for mask wearing in the general population.

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## Introduction

To deal with the COVID-19 pandemic, the systematic wearing of masks has gradually become widespread among all healthcare workers [1]. Indeed, the SARS-CoV-2 virus is now considered to be mainly transmitted by droplets and masks are an effective barrier to fight the spread of the virus [2]. This information was quickly relayed by the media and the demand for masks skyrocketed in patients and in the general population [3,4]. Even though the usefulness of wearing a mask among the general population has come to be widely accepted, the French government has long opposed its systematic use. In normal

times, professionals may already be confused by the variety of masks and their indications. In addition, many institutions are facing a shortage that forces learned societies to review the indications and methods of use [5]. Operational hygiene teams are used to train healthcare workers in the proper use of masks. These training courses are unfortunately infrequent in normal times and only concern healthcare professionals [6].

The general public is constantly exposed to images of people wearing masks through various media [7]. Their behaviour may be induced by this exposition. This is also the case for caregivers who are exposed to these representations daily. However, the pictures disseminated do not always comply with good practice.

The aim of this study was to assess the appropriateness of mask wearing observed in the images broadcast by the main French media during this lockdown period.

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## Methods

We conducted a prospective study from 30<sup>th</sup> March 2020 to 11<sup>th</sup> May 2020, during the public lockdown period imposed by the French government following the spread of confirmed COVID-19 cases and the saturation of intensive care units.

We reviewed some of the main French information media websites: *Le Monde*, *Le Figaro*, *Libération*, *L'Obs*, *Le Point*, *L'Express*, *BFM TV* and *CNews*, and one regional newspaper website: *Le Télégramme*. We daily collected photographs presented on the home page, or on the dedicated COVID-19 page, where a face mask worn by a French healthcare worker could be seen. We then evaluated its compliance with good practices.

*Le Monde* is a generalist daily national journal with about 323,000 subscribers in 2020, whose website received more than 210 million visits in April 2020. *Le Figaro* is a daily journal with 326,000 subscribers and a website consulted more than 210 million times in April 2020. *Le Point* and *L'Express* are weekly magazines, respectively, distributed to 290,000 people and 201,000 people, and their websites were consulted, respectively, 53 million times and 39 million times in April 2020. BFM TV and CNews are the main continuous 24/7 news channels accessible from every television, and the BFM TV website was consulted 180 million times. Finally, *Le Télégramme* is the local journal distributed at Brest Hospital; it is delivered to more than 180,000 people every day and its website received 18 million visits in April 2020 [8].

In France, there are commonly two types of face masks for medical use. The first one is the anti-projection mask or surgical mask and the second one is a respiratory protection device or filtering face piece, usually class 2 (FFP2), the latter being equivalent to an N95 face mask. Surgical mask wearing is recommended for healthcare workers in contact with a person presenting signs of respiratory infection, and in the absence of invasive procedures on the respiratory tract. On the contrary, FFP2 should be reserved for healthcare workers performing invasive medical procedures on the respiratory sphere that may generate an aerosol, such as non-invasive ventilation, nasopharyngeal sampling, endotracheal aspiration, functional respiratory explorations, etc. [1].

Compliance was assessed on the basis of several criteria: (1) only one face mask must be worn at a time; (2) the face mask must cover the nose and mouth, it must not be worn under the chin or on the hair; (3) two ties or elastics must be in place for the mask to be well positioned (surgical mask and FFP2) and to maintain airtightness (FFP2); (4) the face must be hairless under an FFP2 mask to maintain the airtightness; (5) the face mask must not be touched or manipulated; (6) an FFP2 mask must be worn if the picture was taken during an invasive procedure; (7) tissue masks or other barrier masks are not recommended for healthcare workers during care. Mask wearing was considered non-compliant if one of the above criteria was not respected.

Compliance was assessed by two hygienist doctors independently. In case of disagreement, the photographs were reviewed, and a collegial decision was taken.

## Results

We collected 120 different photographs after exclusion of foreign ones. We also ensured that photographs of the general public were excluded. In case of doubt concerning the

occupation of the subject or the nationality of the photograph, the file was excluded. A total of 238 healthcare workers were represented wearing masks. The number of photographs collected by website is presented in Table I.

Finally, 85 photographs (70.8%) were classified as compliant, and 35 (29.2%) as non-compliant. As several healthcare workers could be seen in some pictures, we also classified 38 (16%) instances of mask wearing as non-compliant, out of a total of 238 (Table I).

Among non-compliant photographs, 18 showed healthcare workers wearing a mask under the chin, three of them showed two different masks worn at the same time, 12 masks were not well placed or could not have been airtight because of mispositioned elastics, one FFP2 was worn on a beard, two were touched by the professional, and one surgical mask was worn during an aspiration which is an aerosol-generating procedure. Some of the photographs presented more than one non-compliant criterion. Furthermore, 26 were taken during direct care of patients, whereas nine represented healthcare workers, some of them being key opinion leaders, during an interview (Table II).

## Discussion

Mask wearing is a useful barrier to protect healthcare workers against droplet-transmitted viruses such as SARS-CoV-2, responsible for COVID-19. However, to be effective, masks must be used in accordance with good practice recommendations. Surgical face masks, FFP2 or N95 face masks are single-use products. They should be thrown away after handling and should not be kept around the neck between two treatments. Our study demonstrated an important non-compliance of mask wearing among pictures of healthcare workers published on some of the main French media websites, as 35 photographs out of 120 assessed during the period, were

**Table I**  
Characteristics of observed photographs

|                         |                          | Number | Percentage |
|-------------------------|--------------------------|--------|------------|
| Photographs per journal | <i>Le Monde</i>          | 10     | 8%         |
|                         | <i>Le Figaro</i>         | 19     | 16%        |
|                         | <i>Libération</i>        | 15     | 13%        |
|                         | <i>L'Obs</i>             | 9      | 8%         |
|                         | <i>Le Point</i>          | 7      | 6%         |
|                         | <i>L'Express</i>         | 14     | 12%        |
|                         | <i>BFM TV</i>            | 13     | 11%        |
|                         | <i>C News</i>            | 16     | 13%        |
|                         | <i>Le Télégramme</i>     | 17     | 14%        |
| Photographs             | Compliant                | 85     | 71%        |
|                         | Non-compliant            | 35     | 29%        |
| Wearing of masks        | Compliant                | 200    | 84%        |
|                         | Non-compliant            | 38     | 16%        |
| Cause of non-compliance | Position: under the chin | 18     | 47%        |
|                         | Two masks worn           | 4      | 11%        |
|                         | Elastics unplaced        | 12     | 31%        |
|                         | Beard with FFP2          | 1      | 3%         |
|                         | Touched mask             | 2      | 5%         |
|                         | Wrong type of mask       | 1      | 3%         |
| Context of observation  | During healthcare        | 26     | 74%        |
|                         | Interview                | 9      | 26%        |

Table II

Illustration of the main face coverings errors published on French information websites

| Example  | Website       | URL   | Reference |
|--|---------------|---|-----------|
| A healthcare worker wearing two masks at the same time | BFMTV.com     | <a href="https://www.bfmtv.com/international/en-italie-plus-de-150-medecins-sont-morts-du-coronavirus_AN-202004270261.html">https://www.bfmtv.com/international/en-italie-plus-de-150-medecins-sont-morts-du-coronavirus_AN-202004270261.html</a>   | [11]      |
| A healthcare worker phoning with a mask                | Liberation.fr | <a href="https://www.liberation.fr/france/2020/04/30/est-il-si-difficile-en-medecine-de-dire-je-ne-sais-pas_1786919">https://www.liberation.fr/france/2020/04/30/est-il-si-difficile-en-medecine-de-dire-je-ne-sais-pas_1786919</a>   | [12]      |
| Masks worn as a bib by key opinion leaders             | Liberation.fr | <a href="https://www.liberation.fr/checknews/2020/03/26/cette-professeur-critique-des-methodes-de-didier-raoult-est-elle-en-conflit-d-interet-avec-les-labor_1782911">https://www.liberation.fr/checknews/2020/03/26/cette-professeur-critique-des-methodes-de-didier-raoult-est-elle-en-conflit-d-interet-avec-les-labor_1782911</a> | [13]      |
| Masks worn as a bib by key opinion leaders             | Lefigaro.fr   | <a href="https://www.lefigaro.fr/actualite-france/coronavirus-les-portraits-de-soignants-au-front-a-l-hopital-georges-pompidou-a-paris-20200404">https://www.lefigaro.fr/actualite-france/coronavirus-les-portraits-de-soignants-au-front-a-l-hopital-georges-pompidou-a-paris-20200404</a>   | [14]      |

classified as non-compliant. The main errors described in this study are already known and commonly found in daily practice. The most frequent error seen in the photographs was the wearing of the surgical mask under the chin, as a bib. These masks are kept around the neck in order to be reused quickly. However, masks can paradoxically represent a possible way of contamination when misused. Handling them can damage their filter membrane and reduce the level of protection. Their external faces can also be contaminated by viruses which can end up on the caregivers and then be transmitted to other patients. Public wearing of masks spread in the general population from the perspective of personal protection. However, the general population is not trained in the use of masks even if there are recommendations published by the WHO [9]. They therefore tend to copy what they observe in the media and may base their behaviour on the professionals they see in action. Knowledge on recommended carrying times and fragility of these devices is not well dispersed. Moreover, mistakes in mask positioning are frequently observed in the general public: for example, masks not entirely covering the nose or the mouth, and thus being ineffective.

Media websites are a huge way of disseminating information, reaching a large audience. Mass media campaigns can change human health behaviours [10]. One could hypothesize that information disseminated through media may impact the population behaviour with regard to mask wearing. This could be especially true when the observed behaviour is that of a key opinion leader. We have unfortunately observed that several portraits staged in the press concern medical professors who wore their surgical mask as a bib, which is also a frequent mistake in the general population.

In France, the errors observed could be also be linked to divergent speeches made by the government concerning the value of the mask. During the lockdown period, mask wearing in the general population was not recommended for asymptomatic persons. When people observed that all healthcare workers systematically wore a mask to prevent COVID-19, they felt the need to wear one themselves. Healthcare establishments were quickly faced with shortages of masks which forced institutions and learned societies to review their use indications. This resulted in increased mask wearing time and restrictions on the use of FFP2 masks. The French Hygiene society, SF2H, allowed caregivers to keep the same FFP2 mask up to 8 h maximum and to keep the same surgical anti-projection mask for up to 4 h maximum [5]. Moreover, nursing staff had to use very different

materials throughout the epidemic. To cope with the shortage of masks, establishments had to order many different brands of masks and they found themselves using equipment of very variable quality.

The scale of the epidemic has led to the saturation of healthcare services. Healthcare workers were sometimes overwhelmed by care and had little or no available time to attend training on the use of personal protective equipment. In addition, hospital hygiene teams are often small and have had to cope with an exceptionally large demand for training in the field. The equipment usually used for care was no longer available and it was complicated to train the entire hospital staff to use the new equipment.

We did not observe the use of fabric masks in a care situation. The use of this kind of mask which does not provide a sufficient level of protection is not recommended by learned societies [5]. However, their use is widespread in the general population, especially since the end of confinement in France. Even if its wearing rules are not as strict as those of surgical masks or FFP2, its use cannot be improvised. The general population has never been trained in their use and therefore may copy behaviours observed in the media. Some of these masks made at home have no effectiveness in terms of protection because their level of filtration is not sufficient. Others, available in shops, meet AFNOR standards but must be used in accordance with the recommendations to be effective. The systematic wearing of the mask in public space is not compulsory but some municipalities have attempted to impose it by municipal decrees. It is however compulsory on public transport in large cities such as Paris. Masks are certainly an effective protection in these conditions to prevent the spread of the COVID-19 epidemic.

Our study has some limitations. The websites of the main French newspapers are not the only media where the wearing of masks is visible. Television news and magazines expose the general public to this style of image extremely frequently. We could not assess the compliance of mask wearing in the reports broadcast in videos by lack of means. We felt that the websites were a representative sample of what could be seen in news magazines. These are very popular sites that reach a relatively large audience. It would be interesting to conduct this type of study in other countries, and to assess mask wearing in television programmes. Health authorities should communicate widely regarding good practices for mask wearing in the general population.

**Conflict of interest statement**

The authors have no conflicts of interest to declare.

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